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ABSTRACT

The Spanish/English Language Performance Screening (S/ELPS) was designed to assist the preschool and early elementary classroom teacher in objectively determining each child's dominant oral language for initial instruction. The test does not compare the performance of one child with another. It is designed to obtain objective samples of a child's oral language in Spanish and English and to compare the quality and quantity of the responses to determine dominant oral language. This report describes the S/ELPS, summarizes its developmental background, and reports associated studies of validity and reliability. Three studies of instrument validity and reliability were conducted: Study A involved 30 four-year-old Mexican-Americans; Study B involved 228 day care and kindergarten pupils; and Study C involved 742 Mexican-Americans, Cubans and Puerto Ricans, kindergarten through third grade. These studies indicate adequate to high levels of criterion-related and concurrent validity and test-retest, inter-rater, inter-scorer and intra-rater reliability. (Author/RM)

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THE SPANISH/ENGLISH LANGUAGE PERFORMANCE SCREENING (S/ELPS):

EXTENSION OF RELIABILITY AND VALIDITY STUDIES WITH CUBAN, PUERTO RICAN, AND MEXICAN AMERICAN CHILDREN, PRESCHOOL THROUGH THIRD GRADE

Project No. 443 CH 50237

Grant No. G00-75-00592

Special Projects Division

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JULY, 1977

U.S. Department of Health, Education, and Welfare

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Preparation of this final report which summarizes previous studies and describes the most recent research is the result of the combined effort of the following staff of the Ability Development Project:

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I. INTRODUCTION

The Spanish/English Language Performance Screening (S/ELPS) was designed to assist the preschool and early elementary classroom teacher in objectively determining each child's stronger or dominant oral language for initial instruction. It is not a competitive test and does not compare the performance of one child with another. It is designed to obtain objective samples of a child's oral language in Spanish and in English and to compare the quality and quantity of Spanish and English responses to determine preferred or dominant oral language. Thus, each child is compared with him/herself, not with pre-established norms or other children.

The S/ELPS is the result of a three-year design and testing program which was completed in March, 1976. Additional research was conducted during Fall 1976 and Spring 1977 to extend validation of the S/ELPS for use with children through third grade of Cuban and Puerto Rican as well as Mexican American origin.

The following report describes the S/ELPS, summarizes its developmental background, and reports associated studies of validity and reliability which have been conducted through spring, 1977.

II. INSTRUMENT OVERVIEW AND DEVELOPMENTAL BACKGROUND

The Spanish/English Language Performance Screening (S/ELPS) is an oral language test designed to assist the classroom teacher in objectively determining each child's stronger or dominant language for initial instruction. The S/ELPS may also be used to identify a child's dominant language prior to administration of other tests or for assessing changes in oral language performance.

The S/ELPS was developed as a method of comparing the Spanish versus English oral receptive and expressive language performance of children whose home language may be Spanish. It does not compare the performance of one child with that of another and is not a competitive test. Neither is the S/ELPS an "intelligence" test or a measure of academic achievement, i.e., reading ability. The purpose of the S/ELPS is to obtain consistent, objective samples of the child's oral performance in each language and to compare the quality and quantity of Spanish and English responses in order to determine the child's preferred or dominant language. The Spanish and English parts consist of parallel items which have been tested for equivalency. This is in contrast to many tests which have identical or translated forms.

A. INSTRUMENT DESCRIPTION

The S/ELPS administration kit includes the following materials:

Manual - includes all directions for administering the S/ELPS, instructions for assigning language categories, sample case studies, guidelines for using the S/ELPS language categories for instructional grouping, and technical information.

Manipulatives - two boxes of the following miniature objects:

- Box 1 (Spanish portion) cup, plate, spoon, comb, mirror, watch
- Box 2 (English portion) baby, bottle, bed, chair, table, scissors

Pictures - 8 x 10 color pictures to elicit oral descriptions, illustrating familiar scenes.

Spanish and English record forms - the forms include stimulus questions and a summary classification table, as well as space for recording responses.

The S/ELPS test consists of two parts. Parte I, the Spanish section (administered first) and Part II, the English section (administered second). Each section follows the same five-step sequence of questions and presentation of materials, as follows:

1. Simple familiar questions such as, "¿Cómo te llamas?" or "How old are you?" are asked to put the child at ease and establish the language set.
2. Naming of miniature objects familiar to young children (Spanish - cup, plate, spoon, comb, mirror, watch; English - bottle, bed, baby, table, chair, scissors).
3. Following simple directions using the above mentioned objects, such as "Pon el reloj en la caja" or "Put the scissors in the box."
4. Describing the objects or their use.
5. Describing pictures of familiar scenes. For the Spanish part, these are pictures of a mother and two children bathing and of a piñata birthday party. For the English part, these are pictures of a playground scene and of a father and two children at a circus.

B. LANGUAGE CATEGORIES

Responses to the Spanish portion and to the English portion are rated and then compared to obtain a category rating. These ratings are:

Category 1 - Spanish: The child speaks only Spanish and little or no English.

Category 2 - Predominantly Spanish: The child speaks Spanish as the stronger or dominant language, but can also communicate to a limited extent in English.

Category 3 - Bilingual: The child speaks both English and Spanish. The child may speak the two languages separately or may blend both languages.

Category 4 - Prédominantly English: The child speaks English as the stronger or dominant language, but can also communicate to some extent in Spanish.

Category 5 - English: The child speaks only English and little or no Spanish.

Category 0 - Unclassified: The S/ELPS does not yield a sufficient sample of the child's language on which to base a determination of which language is stronger. (For children who do not respond in either language or for whom an insufficient language sample is obtained)

C. THEORETICAL AND CONCEPTUAL BACKGROUND

Initial development of the S/ELPS was based on Piagetian concepts, an information-processing model,^{1, 2} and clinical experience. It was designed to sample receptive, inner, and expressive language abilities of young children, to move from the concrete to the slightly more abstract, and to move from direct child focus to a more general focus. Receptive and inner language is assessed by observing the way in which the child attends to and processes information or instructions in responding to directions and simple questions throughout the test. At the non-verbal level, inner language is inferred by the child's manipulation of related objects in a meaningful way. Each set of objects includes a group of three related objects (cup, plate, spoon or baby, bottle, bed), two related objects (comb, mirror or table, chair) and an unrelated object (watch or scissors). Expressive oral language is assessed through the way in which the child labels and describes objects. Initial parts of the test focus directly on the child through asking questions of direct relevance to the child. Toy replicas of familiar objects are used for manipulation, naming, following

1. Osgood, C. E. "A Behavioristic Analysis," in Contemporary Approaches to Cognition. Cambridge, Massachusetts: Harvard University Press, 1957.
2. Osgood, C. E. "Motivational Dynamics of Language Behavior," in Nebraska Symposium on Motivation. Lincoln, Nebraska: University of Nebraska Press, 1957.

directions, and describing. In the final section, pictures, which are a more abstract representation, are used to elicit oral expression.

D. ITEM SELECTION

In development of the S/ELPS, the following criteria were applied in selection of items:

1. The tasks presented should be well within the developmental capacities of young children. Thus, the child's performance on an item would depend on the ability to understand and use language rather than upon intellectual ability.
2. The screening should include similar, but not identical items in English and in Spanish.
3. The items were to sample a variety of language activities (Answering Questions, Naming Objects, Following Directions, Describing Objects, and Describing Pictures).
4. The items were to be interesting and enjoyable enough to stimulate the child to speak freely and at some length.

In selecting the toy objects, 58 Mexican American four- and five-year-old children were presented with a pool of 35 familiar objects which were under consideration for inclusion in the test. The children were then asked to name each of the objects. Those objects that were given inconsistent labels and objects that were labeled with three or more different identifiers were not included in the test. A total of twelve objects were selected for inclusion in the first version of the S/ELPS; six of the 12 objects were included in the English part of the test and the other six were included in the Spanish part of the test.

The method used to select pictures for inclusion in the S/ELPS was similar to that used in selecting objects. The same group of 58 children who participated in the object selection study were also asked to respond to a pool of eight pictures illustrating familiar scenes within the home and school. The children were asked to describe the pictures and their responses were recorded. Those pictures that received little or no response were eliminated. Six pictures were initially selected for the design version of the S/ELPS. The number of pictures was reduced to four (two for the Spanish part and two for the English part) after this phase of development because children gave sufficient spontaneous verbalization to four pictures. Length of administration time and ultimate cost could thus be reduced without loss in accuracy. The four pictures selected for inclusion were those that produced the most lengthy responses in both languages. For the Spanish part, these pictures were scenes of two children and a mother drying one of the children in a bathroom and a group of children playing with a piñata. Based on the recommendations of examiners and classroom teachers during the design test phase of development, a birthday cake was added to the piñata scene. For the English part, one scene was of children playing on outdoor play equipment and the second scene contained a father and two children, a clown and balloons.

E. FORMATIVE RESEARCH REGARDING RELIABILITY AND VALIDITY

Following object and picture selection, the S/ELPS was reviewed for face validity, the initial version was administered by classroom teachers in day care centers, formative evaluation was obtained, and validation studies were conducted. The S/ELPS was field tested and validated with four- and five-year-old children enrolled in day care centers and public school kindergartens in Texas. More than 500 children and 25 examiners participated in the various aspects of this final formative research.

1. Face Validity.

After the initial version of the S/ELPS was constructed, an intensive review of the test was conducted by project and non-project staff in order to determine the face validity of the test. Non-project staff were from the Bilingual-Migrant, Follow Through, Early Childhood, and Field Dissemination Divisions of the Southwest Educational Development Laboratory. All were bilingual and had previous testing and/or teaching experience with Mexican American children. The reviewers included three bilingual linguists, five site specialists, two psychologists, three persons trained in the area of speech and language development, and 10 experienced teachers. A total of four reviews were conducted throughout the development of the S/ELPS in order to assess the face validity of the items. Recommendations from these reviews resulted in revisions of wording of questions or directions in the Spanish part of the test and in simplification of the recording form. The questions and stimulus items (objects and pictures) were all judged to be well within the knowledge range of preschool Mexican American children.

2. Pilot Testing.

The initial version of the S/ELPS was administered to 96 4-year-old, Mexican American children in Austin, Texas. The tests were administered by classroom teachers, a linguist and a resource teacher. All examiners were bilingual and had previous experience working with young children. The screenings were tape recorded for later rescoring by another linguist.

Eighteen of the 96 children were administered the S/ELPS either totally in English or totally in Spanish in order to assess the equivalency of the Spanish and English parts of the test. The remaining 78 students were administered the test in its present form, that being, one part of the test administered in English and the other part administered in Spanish. Each

child's teacher was asked to rate the child's language dominance. These ratings were based on their classroom instruction of the child following a bilingual curriculum and personal knowledge of the children. The results of the language screening were compared with the results of the teacher's ratings for 94 of the students. Additionally, each of the examiners completed a formative evaluation questionnaire indicating their evaluation of the S/ELPS.

Ten of the taped testing sessions were randomly selected from the S/ELPS administration for review by an external consultant who was an expert linguist. This linguist neither had access to the S/ELPS screening records nor previous knowledge of the S/ELPS. The linguist was asked to determine the child's preferred language on the basis of the tape recordings only. A comparison between S/ELPS scores and the linguist ratings resulted in 80% agreement.

To determine the equivalency of the Spanish and English parts of the test, the English part was translated into Spanish and the Spanish part into English. The test was administered to 10 children totally in English and to eight children totally in Spanish in order to determine whether or not differences in responses to the two parts were due to differences in item difficulty. The responses were subjected to a Chi Square analysis to determine whether significant differences existed. There were no significant differences in oral response, thus indicating that the items were equivalent in level of difficulty regardless of the language of administration.

Prior to the administration of the S/ELPS, teachers were asked to rate the language performance of each child. These original ratings were then compared to the child's classification according to the S/ELPS. A comparison of the teacher-

ratings and the S/ELPS ratings resulted in an agreement of 81%. Of the 18 cases (19%) of lack of agreement between teacher and S/ELPS scores, in 13 instances the teacher assessed the child as having more English skills than did the S/ELPS.

Each examiner was asked to record the length of test administration (10-15 minutes); and to use a three point scale in rating ease of use (65% Very Easy; 36% Easy); clarity of manual instructions (96% Very Clear, 4% Clear); clarity of scoring (88% Very Clear, 12% Clear); and helpfulness of the examples (96% Helpful, 4% Made No Difference). In no case was a negative rating given in response to any of the questions. Recommendations by the examiners were used to clarify the scoring method and the scoring form was revised to improve usability. Given the satisfactory findings of this pilot stage, S/ELPS development was considered complete.

III. STUDIES OF INSTRUMENT RELIABILITY AND VALIDITY

Since finalization of the S/ELPS, three further studies of reliability and validity have been conducted. The first two studies reaffirmed use of the S/ELPS with preschool and kindergarten Mexican American pupils in Texas. Due to continued favorable results, the S/ELPS was sent out for bid for commercial publication. CTB/McGraw-Hill became the commercial publisher of the S/ELPS and subsequently funded a third study. This study, more comprehensive in scope than the other two, evaluated the use of the S/ELPS with kindergarten through third grade children of Cuban (Miami, Florida), Puerto Rican (Bethlehem, Pennsylvania) and Mexican American (Yuma, Arizona; San Diego, California; San Antonio, Texas) origin. Results of each of these studies are reported in the following sections.

A. STUDY A: USE OF THE S/ELPS WITH 30 FOUR-YEAR-OLD MEXICAN AMERICAN CHILDREN

The first research conducted after the S/ELPS was finalized employed a sample of 30 Mexican American four-year-old children in Texas. Criterion related validity and test-retest, interrater and intrarater reliability of the S/ELPS were evaluated.

Criterion-related validity was assessed by comparing S/ELPS scores with teacher judgments of their students' language performance. All teachers were bilingual, and used the Bilingual Early Childhood Curriculum (SEDL, 1972). The teacher ratings were considered the external criteria of language performance against which the S/ELPS scores were compared. Comparison of teacher ratings and S/ELPS scores resulted in a validity coefficient of .86.

To determine test-retest reliability, all 30 children were administered the S/ELPS on two occasions. The second test administration occurred between one and five days after the first administration. A Pearson's product moment correlation was computed comparing the results of the first and second administrations. The reliability coefficient obtained from this analysis was .93.

To determine interrater reliability, the second test administration mentioned above was conducted by different examiners than those who had administered the first tests. A reliability coefficient was computed between scores on the first and second administration. This resulted in a coefficient of .99.

To determine intrarater reliability, the first test administrations were tape recorded for 14 of the children. The recordings were then rescored by the person who had administered the first test. A correlation coefficient was computed comparing the results of the first test administration with that of the rescoring on the basis of the tape recording. A reliability coefficient of .99 was obtained.

Table 1 contains a summary of the findings of this study.

B. STUDY B: USE OF THE S/ELPS WITH 228 DAY CARE AND KINDERGARTEN PUPILS

A second study was conducted to assess the reliability and validity of the S/ELPS with 228 children enrolled in day care and kindergarten classes in Austin and San Antonio, Texas. Fourteen examiners conducted the testing, nine of whom were classroom teachers. The other five examiners were SEDL staff members. Of the 228 children, 81 were administered the S/ELPS in a test-retest paradigm.

Table 1

Summary Results: S/ELPS Reliability and
Validity Studies A & B

N	Age	Origin	Location	Test	Pearson Correlation
Study A					
30	4 yr.	Mex. Amer.	Texas	Criterion Validity*	.86
30	4 yr.	Mex. Amer.	Texas	Test-Retest Reliability	.93
30	4 yr.	Mex. Amer.	Texas	Interrater Reliability	.99
14	4 yr.	Mex. Amer.	Texas	Intrarater Reliability ⁺	.99
Study B					
223	Preschool/ Kind.	Mex. Amer.	Texas	Criterion Validity *	.85
81	Preschool/ Kind.	Mex. Amer.	Texas	Test-Retest Reliability	.88

* S/ELPS scores compared to teachers' ratings of language dominance

+ Procedure: Rescore of tape recorded second test administration by person performing first test administration.

Criterion-related validity of the S/ELPS was evaluated in this study by comparing the teacher judgment of the language performance of 223 of the children with their S/ELPS scores. A Pearson's product moment correlation was used to compare the teacher ratings with the S/ELPS scores. This analysis resulted in a validity coefficient of .85.

The reliability of the S/ELPS was evaluated in terms of test-retest consistency. Comparison of the results of the first and second test administrations yielded a reliability coefficient of .188.

Table 1 also contains a summary of the results of this study.

Full report of studies A & B are included in the following documents:

Evans, J.S., A Project to Develop Curriculum for Four-Year-Old Handicapped Mexican American Children (Final Report, Bureau of Education for the Handicapped, Project No. H 33-3640. November, 1974). ERIC Document.

Evans, J.S., Technical Report, Spanish/English Language Performance Screening, Project No. 443 CH 50237, Grant No. G00-75-00592, March, 1976, submitted to ERIC.

A summary report is also included in Section F: Technical Information of the Examiner's Handbook, Spanish/English Language Performance Screening, CTB/McGraw-Hill, Monterey, California, 1976.

C. STUDY C: USE OF THE S/ELPS WITH 742 MEXICAN AMERICAN, CUBAN, AND PUERTO RICAN CHILDREN, KINDERGARTEN THROUGH THIRD GRADE

On the basis of the above studies, the S/ELPS was further confirmed as a valid and reliable measure of the dominant language of four- and five-year-old Mexican American children in Texas. Following U.S. Office of Education guidelines,

the S/ELPS was submitted through the funding agency (Bureau of Education for the Handicapped) to the National Institute of Education for bids from commercial publishers. Announcements of the availability of the S/ELPS for publication were sent out to commercial publishers through Publishers Alert. Responses to the Requests for Proposals were received by the Southwest Educational Development Laboratory and CTB/McGraw-Hill received the contract. The S/ELPS kit was prepared and became available commercially from CTB/McGraw-Hill, Monterey, California, in the fall of 1976.

1. Overview

Recognizing the need for additional data on the S/ELPS regarding usability with other Spanish-speaking groups and with children in the early elementary grades, CTB/McGraw-Hill provided the financial support for a third study of validity and reliability. Thus, during the period of September, 1976 through February, 1977, the S/ELPS was administered to Mexican American, Cuban and Puerto Rican children attending kindergarten through third grade in order to determine the reliability and validity of the S/ELPS for use with a wider population than had been previously tested. Thirty-five examiners tested 742 students in Arizona, California, Florida, Pennsylvania, and Texas in an effort to further specify the criterion and concurrent validity of the S/ELPS as well as the test-retest, interrater, interscorer and intrarater reliability of the instrument.

The S/ELPS scores of 689 students were compared with teacher ratings of their oral language performance, thus comprising a criterion-related test of validity. The scores of the remaining 53 students were compared with their performance on another standardized test, The James Test of Language Dominance, thereby providing a measure of concurrent validity. To obtain test-retest, interrater and intrarater reliability, a sub-sample of 326 students were administered the S/ELPS on a second

occasion in a test-retest paradigm. The number of children tested, grade level, examiner characteristics, test conditions, and date of testing for each site are shown in Table 2, "Subject/Examiner Summary."

2. Test Sites and Examiners

Sites were selected to include students of Cuban, Puerto Rican, and Mexican American origin. Mexican American students were tested at 3 test sites (California, Arizona, Texas), Puerto Rican children were tested in Pennsylvania and Cuban students in Florida. Test sites were chosen on the basis of their participation in a bilingual program and location within a predominantly Spanish-speaking neighborhood. At each site, the students were randomly selected from lists of students with Spanish surnames. All examiners were trained and supervised by a staff person from the Southwest Educational Development Laboratory. The examiners received four hours of training before actual testing began. The training consisted of two hours of familiarization with the test materials and procedures, followed by two hours of practice administration under the direct supervision of the staff member. All examiners were bilingual residents of the local community and familiar with the local dialect. In two sites, the examiners were familiar with the children being tested (San Antonio and Miami). In the other sites, the examiners had not met the children prior to testing.

Mexican Americans in Texas. One hundred and ninety-eight Mexican American children in kindergarten through third grade were tested in San Antonio, Texas. Since the criterion related validity of the S/ELPS for use with kindergarten children had been established in previous studies, five-year-olds were not included in this part of the study. The measure of criterion-referenced validity was obtained

TABLE 2

SUBJECT/EXAMINER SUMMARY

Origin	Site	Number of Children	Grade Levels	Examiners	Test Conditions	Date of Testing
Mexican American	School District A	145	1-3	Classroom teachers, assistants, and SEDL staff	Child's classroom and hallway	Sept. 76
	School District B (concurrent validity)	<u>53</u>				
	San Antonio, Texas	198				
	Yuma, Arizona	93	K-3	Assistant teachers un- known to children	School cafeteria and vacant classrooms	Oct. 76
	San Diego, California	166	K-3	Students of the U. S. International University	Child's classroom and vacant vacant classrooms	Dec. 76
Cuban	Miami, Florida	84	K-3	Resource teachers and parents with limited familiarity with children	Outside child's classroom and school cafeteria	Oct. 76
Puerto Rican	Bethlehem, Pennsylvania	201	K-3	Teachers unknown to children	Resource rooms	Jan. 77

only for children in first through third grades (N=145) using teacher ratings of language dominance. In determining the concurrent validity of the S/ELPS, children in kindergarten through third grade who had already been administered the James Test of Language Dominance were tested with the S/ELPS (N=53). The testing in San Antonio was conducted by teachers, assistant teachers, or Lab staff in September, 1976. SEDL staff administered the S/ELPS to children participating in the concurrent validity study. The tests were administered within the child's classroom and/or in the hall outside the child's classroom.

Mexican Americans Outside Texas. A total of 259 Mexican American children in kindergarten through third grade were tested in Yuma, Arizona and San Diego, California. In Yuma, testing was conducted by assistant teachers who were not previously acquainted with the children. The testing was conducted in the school cafeteria and in a vacant classroom. An additional sample of children in fourth through seventh grade were also tested. However, the results of these tests were not included in the data analysis because the number of subjects in this group was too small for meaningful analysis. In San Diego, 166 children were tested. The testers at this site were students from the United States International University and were not previously acquainted with the children. The testing was conducted in the child's classroom or in an empty classroom.

Cubans. Eighty-four children of Cuban origin in kindergarten through third grade were tested in Miami, Florida in October, 1976. The examiners were resource teachers and parents of students. The examiners were familiar with some of the students being tested. Testing was conducted in an area outside the child's classroom or in the school cafeteria.

Puerto Ricans. Two hundred and one children of Puerto Rican origin in Bethlehem, Pennsylvania were tested during January, 1977. Although these students were in an open classroom setting and were not grouped strictly according to their grade level, they had been attending kindergarten through third grade. Therefore, there was less distinction between grades for the Puerto Rican children than for the other groups tested. The tests were administered by unemployed teachers and testing was conducted in the school resource room.

3. Testing Procedure

Although the testing conditions and examiners varied slightly from site to site, the same testing procedure as described in the S/ELPS manual was followed at all sites. Each child was individually tested by a bilingual examiner. After greeting the child, the examiner proceeded directly into testing in Spanish. The initial test questions (¿Cómo te llamas?; ¿Lienes hermanos y hermanas?; ¿Qué te gusta hacer en casa?) are conversational in nature and usually encourage the child to converse freely. It was noted that most children readily adapted to the testing situation and responded freely to the test questions and items. The examiner recorded a verbatim account of the student's responses, adding comments on the record form when necessary. In no case was the child cued or told to speak in one language or another. At the completion of testing, the student was thanked for his or her cooperation and returned to the classroom.

Following the testing of all students, the teachers were asked to give their ratings of the student's language performance on the same five-point scale used in the S/ELPS. A written description of each of the categories on the scale was given to the teacher to follow in rating each child. The teacher had no knowledge of the child's performance or rating on the S/ELPS. Therefore, the

teacher ratings were independent of the S/ELPS results. Only the bilingual teachers or assistant teachers who had known the child for at least one month rated the child's language performance.

4. Results

Two measures of test validity and four measures of reliability were studied. Criterion-referenced validity was evaluated by comparing the S/ELPS scores with an external criterion of oral language dominance, teacher ratings. Concurrent validity was evaluated by comparing the S/ELPS scores with the scores from the James Test of Language Dominance. The four reliability measures were: (1) test-retest, (2) interrater, (3) interscorer, and (4) intratater.

Criterion-Related Validity. The external criteria against which S/ELPS scores were compared was teacher judgment of each child's oral language performance based on their classroom experience with the child for a period of at least one month. Classification of each child's oral language abilities was made according to the same scale used in the S/ELPS, as described in the preceding section. In analyzing the criterion related validity data (i.e., teacher judgments versus S/ELPS scores), the data from the Puerto Rican students were analyzed separately. This was done because the teacher judgments for Puerto Rican students were not collected in the same manner as in the other four test sites. Discussion of this variation and the data obtained are included in the following section.

Pearson's product moment correlations were thus computed comparing teacher ratings and S/ELPS scores across all test sites, excluding Pennsylvania. This analysis resulted in an overall validity coefficient of .83. Table 3 presents

the correlations between the S/ELPS scores and teacher classifications by site, by grade level, and by Spanish language sub-group. The resulting validity coefficients range from a high of .92 for all kindergarten children to .51 for all third graders. Validity coefficients of the Spanish language sub-groups range from .83 for Cuban Americans to .68 for Mexican Americans in California.

Table 4 presents a matrix of the number of children included in each category by teacher rating and S/ELPS classification; therefore, the table portrays the rate of agreement/disagreement between these two measures of oral language dominance. There are indications that the teacher ratings at the second and third grade levels were based on their judgments of the child's overall language performance, including subject area performance (reading, writing, and math) as well as oral language skill. Therefore, the validity coefficients for children in second and third grade may have been different (possibly higher) had the teacher ratings been based solely on the child's oral language ability.

Criterion Validity for Puerto Rican Subjects: The validity data on the children of Puerto Rican origin was analyzed separately due to the fact that the criteria of oral language dominance used in Pennsylvania was not comparable to that used in other test sites. In Pennsylvania, the criterion classifications were based on the instructional grouping of the students rather than the teachers' ratings by S/ELPS classifications. The Pennsylvania groupings were as follows:

- (1) Spanish dominant - a Spanish speaker whose English abilities are insufficient for the child to profit from English instruction
- (2) Bilingual - a Spanish speaker with some oral English language skills who is able to read in Spanish at the first grade level
- (3) ESL-S - children whose oral English language skills and English reading skills are sufficient for reading in English with support through the explanation of concepts in Spanish

TABLE 3

Study C:

Criterion-Referenced Validity Data Summary

Location	Pupil Origin	Kindergarten		Grade 1		Grade 2		Grade 3		Total	
		N	Corr.	N	Corr.	N	Corr.	N	Corr.	N	Corr.
Texas	Mexican Amer.	---	---	47	.88	48	.71	50	.41	145	.73
Arizona	Mexican Amer.	40	.96	18	.59	35	.82	---	---	93	.87
California	Mexican Amer.	43	.79	40	.77	42	.43	41	.56	166	.68
Tx, Ariz, Cal	All Mex Amer.	83	.93	105	.84	125	.81	91	.51	404	.82
Florida	Cuban	21	.84	18	.90	19	.93	26	.66	84	.83
Tx, Ariz, Cal, Fla	All Mex Amer. and Cuban	104	.92	123	.84	144	.82	117	.51	488	.83
Pennsylvania	Puerto Rican	30	.50	65	.69	52	.70	54	.45	201	.64

Note: All correlations are between teacher ratings and S/ELPS scores of pupil language dominance; Puerto Rican data is kept separate because different teacher rating criteria were employed. Pearson's product moment correlations are reported.

TABLE 4

RATE OF AGREEMENT BETWEEN
TEACHER RATINGS AND TEST SCORES

TEACHER RATING

		Spanish	Predominantly Spanish	Bilingual	Predominantly English	English
TEST SCORES	Spanish	59	16	5	0	0
	Predominantly Spanish	15	50	36	3	1
	Bilingual	8	23	146	31	6
	Predominantly English	0	2	10	10	11
	English	0	0	0	4	52

- (4) ESL-E - children whose language skills are sufficient for reading in English without Spanish support
- (5) English - children who can function in a regular English program for academic learning

Validity data for the Puerto Rican group are also separated because differences in the instructional setting may have affected the criterion of oral language dominance (teacher ratings based on instructing the child both in Spanish and in English). The other groups (Mexican American and Cuban American students) were in self-contained classrooms, primarily under the direction of a single bilingual person. The Puerto Rican students were in open classrooms using a team-teaching approach with both Spanish and English speaking teachers. These students were under the direction of more than one person, depending upon the subject area and instructional language. For the purposes of research in establishing test validity, this presented two problems. First, teacher ratings were based on their knowledge of the child's language in relation to the subject area and the language in which that subject was taught. Second, the children had been grouped for instructional purposes using the same classification titles but different criteria, as discussed above. The extent to which these prior groupings and subject area instruction influenced teacher ratings is unknown.

For the Puerto Rican group, instructional groupings were compared with S/ELPS scores using a Pearson's product moment correlation coefficient. For the total group of 201 Puerto Rican students a validity coefficient of .63 was obtained. In addition, a validity coefficient was obtained for instructional groupings and S/ELPS scores for the students at each grade level, kindergarten through third grade. While these data are also presented in Table 3,

it should be noted that the coefficients obtained are somewhat lower than those from the other test sites.

Significant differences between criterion related validity coefficients:

Subsequent analysis was performed to test the significance of the differences between the criterion-related validity coefficients obtained for (1) the three Spanish language sub-groups, (2) the four grade levels, and (3) the five sites involved in the study. As expected, the validity coefficients obtained for the Puerto Rican students were significantly different from those obtained for both the Mexican American and Cuban sub-groups (smallest difference = .188; $p < .05$) while there was no significant difference found when the correlations for the Mexican Americans and Cubans were compared with each other. This is undoubtedly due to the difference in the rating systems employed as discussed previously. Given the data that was obtained, it can be stated that the S/ELPS has a high level of criterion-related validity for use with Mexican American and Cuban pupils. Because of differences in classroom organization and data collection methodology, only a moderate level of validity for use with Puerto Rican students has been confirmed. When considering the differences in correlation coefficients by grade level, kindergarten pupils were found to be significantly different from all other grades (smallest difference = .078; $p < .05$), while first and second grade pupils were additionally found to be significantly different from kindergarten (smallest difference = .078; $p < .05$) and third grade (smallest difference = .305; $p < .05$), but not to each other. This would indicate that the S/ELPS is a more valid measure of oral language performance when used with younger children (e.g. kindergarten through second grade). When the difference between the validity coefficients obtained at each site were tested, it was indicated that Arizona and Florida were similar to each other and significantly different from the others (smallest difference = .1; $p < .05$), and Texas was significantly

different from Pennsylvania and California (smallest difference = .057; $p < .05$), while California and Pennsylvania were not significantly different from each other. Thus it is apparent that some factors related to the test sites affected the validity coefficients obtained. Figure 1 illustrates these findings.

Concurrent Validity. Concurrent validity was evaluated by comparing performance on the S/ELPS with performance on another measure of language dominance. A sample of 53 Mexican American children from grades K through three were administered the S/ELPS. These students had been previously tested with The James Test of Language Dominance two months earlier. Approximately equal numbers of students from each grade level participated. Pearson's product moment correlations were computed to determine the degree of agreement between S/ELPS and James scores. This analysis yielded a validity coefficient across all grade levels of .86. These results indicate a high degree of concurrent validity when comparing the results of the S/ELPS to that of the James. Table 5 contains a summary of this data.

Reliability Studies. The reliability of the S/ELPS was evaluated by retesting a sub-sample of 326 of the 689 subjects who were administered the S/ELPS. The retested subjects were drawn from each grade from each test site. In evaluating the reliability of the S/ELPS, measures of test-retest, inter-rater, inter-scorer, and intra-rater reliability were collected.

Test-Retest Reliability. Test-retest reliability of the S/ELPS was determined by readministering the S/ELPS to a sub-sample of students at each grade level at each test site (Total N = 326). Students were retested from one to three days following the first test administration. Although students were retested under

Figure 1

Study C: Significant Differences Between
Criterion-Related Validity Coefficients

Variable	Correlation Differences				
Language Subgroup:	Mexican American = Cuban < Puerto Rican				
	(r=.82)	(r=.83)	(r=.64)		
Grade Level:	Kindergarten < Grade 1 = Grade 2 < Grade 3				
	(r=.92)	(r=.81)	(r=.82)	(r=.51)	
Test Site:	Arizona = Florida < San Antonio < California = Pennsylvania				
	(r=.87)	(r=.83)	(r=.73)	(r=.68)	(r=.64)

Table 5

Study C: Concurrent Validity, Test-Retest Reliability

Interrater Reliability and Intrarater Reliability Data Summary

	N	Origin	Grade Level	Pearson Correlation
Concurrent Validity	53	Mexican American	K-3rd	.86
Test-Retest Reliability	326	Mexican American Puerto Rican, Cuban	K-3rd	.84
Interrater Reliability	153	Mexican American Puerto Rican, Cuban	K-3rd	.87
Interscorer Reliability	90	Mexican American Puerto Rican, Cuban	K-3rd	.97
Intrarater Reliability	173	Mexican American Puerto Rican, Cuban	K-3rd	.81

*comparison of S/ELPS with James Test of Language Dominance

conditions similar to those in the first test administration, in approximately half of the cases, a different examiner retested the student.

A Pearson's product moment correlation was performed comparing the scores of the first test administration to those obtained on the second administration. The results of this analysis yielded a reliability coefficient of .84. Summarization of this data is found in Table 5.

Interrater and Interscorer Reliability. In order to determine the consistency of the S/ELPS scores between different examiners, two methods were employed: First, two examiners tested the same child on two separate occasions (N = 153). Additionally, the test protocols of a sample of 5 subjects at each grade level from each test site were rescored by a different examiner (Total N = 90).

One hundred and fifty-three subjects were retested by a different examiner than had administered the S/ELPS on the first occasion. A Pearson's product moment correlation was used to measure the degree of agreement between the two test scores for each student. This analysis yielded a reliability coefficient of .87. In determining the degree of inter-scorer consistency of the S/ELPS, 90 of the test protocols were rescored after all tests had been administered. Members of the SEDL staff rescored the S/ELPS by reviewing the total protocols. A Pearson's product moment correlation was used to determine the degree of agreement between the test scores and the scores obtained on the rescoring. This analysis yielded a reliability coefficient of .97. Thus, two measures of interrater reliability were evaluated, one related to scorer differences influenced by the administration and scoring of the S/ELPS by two different examiners, and the second related to the score differences influenced only by the rescoring of the

protocol. Summary of the correlational data obtained in this part of the study is found in Table 5. Table 6 is a matrix which depicts this rate of agreement for test-retest reliability with different examiners.

Intrarater Reliability. A sub-sample of 173 subjects were retested on two occasions by the same examiner. Subjects from each grade level at each test site were retested in this condition. As in the condition where subjects were retested by different examiners, subjects in this condition were retested one to two days following the first administration of the S/ELPS. A Pearson's product moment correlation was employed to determine the degree of agreement between the two S/ELPS scores for each individual. This analysis yielded a reliability coefficient of .81. Table 5 includes a summary of these findings, while the rate of agreement matrix of scores from the first administration compared to those of the second administration is portrayed in Table 7. The difference between the correlation coefficients for retest data for same examiner ($r = .81$) versus that retest data for different examiner ($r = .87$) was analyzed to determine if the difference between coefficients was significant. The results of this test indicated that the difference between the correlation coefficients was not significant ($p = .07$).

TABLE 6
Study C:
RATE OF AGREEMENT FOR TEST-RETEST WITH DIFFERENT EXAMINERS
BASED ON A SUB-SAMPLE OF 153 SUBJECTS

		FIRST ADMINISTRATION				
SECOND ADMINISTRATION		Spanish	Predominantly Spanish	Bilingual	Predominantly English	English
	Spanish	24	3	0	0	0
	Predominantly Spanish	7	12	9	0	0
	Bilingual	3	9	57	5	0
	Predominantly English	0	0	3	8	3
	English	0	0	0	1	9

TABLE 7

Study C:

RATE OF AGREEMENT FOR TEST-RETEST WITH SAME EXAMINERS
BASED ON A SUB-SAMPLE OF 173 SUBJECTS

FIRST
ADMINISTRATION

		Spanish	Predominantly Spanish	Bilingual	Predominantly English	English
SECOND ADMINISTRATION	Spanish	26	0	2	0	0
	Predominantly Spanish	4	20	8	2	1
	Bilingual	2	7	68	6	2
	Predominantly English	0	1	3	5	2
	English	0	0	1	1	12

IV. SUMMARY DISCUSSION

This paper provides an overview of the technical development of the S/ELPS as well as a review of the research conducted to date regarding its reliability and validity. In general terms it can be stated that sound methods of test development were employed and recorded, leading to the creation of an instrument which well met its objective of providing a brief, easy-to-administer test of oral language dominance (Spanish/English) for use by the classroom teacher. The three studies completed to date indicate adequate to high levels of criterion-related validity, concurrent validity, test-retest reliability, interrater reliability, inter-scorer reliability and intrarater reliability for use of the S/ELPS with Mexican American, Puerto Rican and Cuban children, preschool through third grade.

As a part of one study (Study C), comparative analyses for significant differences between criterion related validity correlation coefficients obtained were conducted. Significant differences were found with respect to language sub-group, grade level and test site. This was generally taken to indicate that the S/ELPS has greater validity for use with younger children, that because of rating differences higher correlations were found for Mexican American and Cuban children, and that certain site-specific factors were also affecting the correlations. Further review of the findings as a whole suggest the following explanation. Looking at the number of children tested per examiner per day at each of the test sites (see Table 8), there is an apparent correlation between the number of children tested per day per examiner and the criterion related validity coefficients obtained at each site (see Figure 2).

TABLE 8

Study C:

A Comparison of Number of Tests/Examiner/Day

vs.

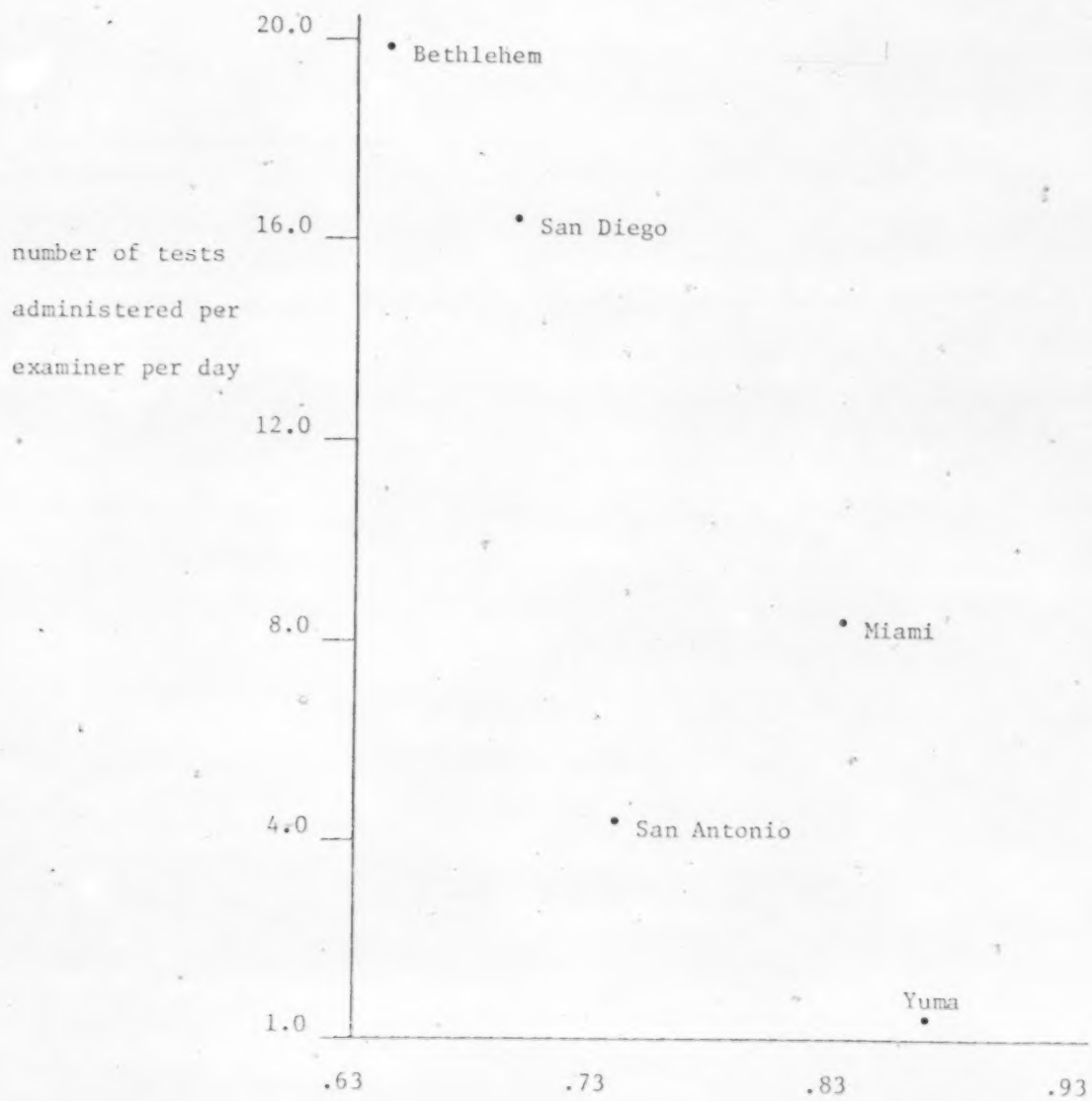
Criterion-related Validity Coefficients by Test Site Criterion Validity

Test Site	No. of Tests Administered	No. of Examiners	Testing Days	No. Tests/ Examiner/Day	Coefficient
Yuma	109	16	5	1.36	.868
Miami	169	5	4	8.45	.833
San Antonio	193	8	6	4.02	.733
San Diego	248	5	3	16.53	.676
Bethlehem	297	5	3	19.80	.636

Figure 2

Study C:

The relationship between criterion-related validity coefficients vs.
number of tests administered per examiner per day by test site.



It seems plausible that when examiners are required to test large numbers of children quickly, less valid results are obtained. It also seems likely that the examiners felt under a time pressure and therefore spent less time testing the students. In addition, the examiners may not have conducted the testing in as thorough a manner as in test sites where only a few children were tested. The primary implication is that testing should be conducted at a relaxed pace, allowing at least 15 minutes per test administration. Testing of entire classrooms should be extended over a two to three day period, rather than attempting to test all children within a single day. Following these procedures should increase the probability of getting valid appraisals of the students' oral language abilities with the S/ELPS. Needless to say, these findings have implications for the administration of other tests to be administered to large numbers of children.

APPENDIX
STUDY C RAW DATA

For the interested technical reader or those who may wish to perform further analyses of the data obtained in Study C, the most recent and comprehensive study of those performed on the S/ELPS to date, the raw data for this study is reproduced here.

The coding format employed for the data is as follows:

Column 1: Test Site 1 = Miami, Florida

2 = Bethlehem, Pennsylvania

3 = San Antonio, Texas

4 = San Diego, California

5 = Yuma, Arizona

Columns 2-3: Classroom

Columns 4-5: Child

Column 6: Grade Level

Column 7: Teacher Rating

Column 8: S/ELPS Score

Column 9: S/ELPS Retest Score with Same Examiner

Column 10: S/ELPS Retest Score with Different Examiner

Column 11: S/ELPS Rescore from Tape Recording

10202011010

10501111011

10406111010

10407111010

10508111010

10606211010

10601212020

10108022020

10504122022

11013322020

10101023023

11012323020

11011332030

10401123030

10402123030

10410123030

10103033033

10203033030

10205033030

10301033030

10303033030

10502133033

10503133033

10403133030

10404133030

10408133030

10409133030

10507133030

10509133030

10602233030

10603233030

10604233030

11006333030

11010333030

11014333030

10110043040

10106034040

10109011101

10111011100

10111011100

10201011100

10803211202

10305012200

10601212202

10804212202

10911312202

11001312200

10107032202

10505133203

10405133200

10802233203

10806233200

11003333200

10401312302

10406332300

10007323300

10204033300

10302033300

10304033300

10605233303

10605233300

10702233300

10703233300

10704233300

10705233300

10807233300

10808233300

10902333303

10405333303

10707333303

10703333300

10704333300

10908333300

10909333300

10910333300

11004333300

11005333300

11007333300

11008333300

11009333300

11015333300

10102034300

10701233400

10105034404

20107011011

20105021011

20107011011

20110021011

20405021010	20410323020	21115334030	20704122300
20706021010	21307121030	21317324030	21116322300
20710021010	21318122030	21508254040	21315322300
20103121011	21302322030	20801344040	20708143300
20118121010	20407023030	21127344040	21307123300
20403121010	20501033030	20125345045	20606243300
20718121010	20502033030	21007345040	21305223300
21509241010	20417123030	21130345040	21503253300
20409021020	20421123030	20112224054	21504243300
20408121020	20719123030	20510245050	21505253300
20707121020	21118123030	20511345050	20114323302
20703251020	20404223030	20808345050	20402323300
21109221020	20505243030	21005345050	20726343300
20711022020	20508243030	21128345050	21314333300
20117122020	20509243030	20108121101	21501323300
21119122020	20701223030	21106221100	20724124300
20104222022	21114233030	20401321100	20730154300
20420023020	21312223030	21304323100	21117324300
20709013020	20116323033	21303122200	20115325304
20111123022	21316323030	20305243200	21101145400
21120123020	21323343030	21306145200	20725345400
21319123020	20201044034	20101231302	20406143500

21506055500	21108122000	21406123000	21001343000
21507055500	20102222002	20113233003	21502343000
20705145500	20128242000	20212223000	20203044004
21103145500	20713222000	20423223000	21107024000
21105021000	21325212000	20427223000	21122024000
21111021000	20205342000	20428223000	20106114003
20113121000	20211352000	20712223000	20124124000
20120121000	20716322000	21129243000	20127144000
20121121000	20717322000	21404243000	20210154000
20416141000	21330352000	21405243000	20208244000
20417121000	20202033003	20206343000	20203244000
21121121000	21310023000	20411323000	20213244000
21126121000	21327023000	20412333000	20727244000
21308131000	20418123000	20413333000	21006224000
20307221000	20422123000	20414323000	21102224000
21008241000	20424123000	20415323000	20126344004
21313221000	20426123000	20425343000	21407344000
21301331000	20721123000	20503353000	21110025000
21311022000	20722123000	20504323000	21320025000
21328032000	20728123000	20507343000	20123125000
21329032000	21327123000	20714323000	20129145000
20122122000	21324113000	20715323000	20429145000

20723145000	30119111010	30406231300	30606344400
21003145000	30114122020	30424232300	30407254500
21004145000	30117122020	30210133300	30621335500
21123125000	30115132020	30213133300	30203111001
21124145000	30120133030	30217133300	30214111000
21125145000	30118134040	30403233300	30221111000
21321145000	30121134040	30411233300	30222111000
21326145000	30517331100	30412233300	30225111000
21403145000	30520331100	30418233300	30103111000
20506245000	30202122202	30422233300	30110111000
20729255000	30211122200	30607333300	30413211000
20802245000	30213122200	30611333300	30206122000
20803245000	30423222200	30613333300	30207122000
20804245000	30209132200	30614333300	30208122000
21002245000	30217132200	30618333300	30215122000
21401255000	30409232200	30624333300	30216122000
21402245000	30508332200	30401234300	30220122000
20204345000	30609332200	30201132403	30226122000
20207345000	30513342200	30525333400	30401122000
20512345000	30212133200	30402243400	30107122000
20513345000	30421234200	30405234400	30108122000
30116111010	30507334200	30505334400	30111122000

30113122000	30104133000	30521333000	30419234000
30301222002	30106133000	30522333000	30501334003
30302222002	30109133000	30526333000	30602334000
30313222000	30305233003	30601333000	30613334000
30323222000	30308233000	30603333000	30112144000
30414222000	30309233000	30610333000	30306235000
30416222000	30310233000	30612333000	30321245000
30516322002	30311233000	30615333000	30322245000
30515322000	30315233000	30616333000	30324245000
30517322000	30317233000	30623333000	30325245000
30520322000	30325233000	30205134003	30303235005
30523332002	30328233000	30204134004	30625355000
30504332000	30408233000	30105134000	40803111010
30518332000	30511333003	30307234000	41004211010
30604332000	30524333003	30312234000	40401021010
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30224133000	30512333000	30415234000	40801121020
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40211021031	41005233030	40109033100	41301343300
41001221030	41401333033	40511111201	40509134300
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40208022030	41402334044	40103022200	40501155505
40212022030	41408313030	41011222200	41407311100
41003222030	40106011100	41105222200	40209011001
41205222030	40107011100	41010223200	40114011000
41407313033	40110011100	41102223300	40115011000
41411333030	40113011100	41007223300	40118011000
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41403323033	40506111100	41404323300	40206011000
41405323033	40910211101	41415323300	40303011000
41406323030	41008211100	41506323300	40514111001
41412323030	41414311100	40513133303	40606111000
40207033033	40104011100	40505133300	40907211000
40402033030	40105011100	40507133300	40914211000
40601133030	40101021100	40705133300	41006211000
40603133030	40108021100	40809133300	41308311000
40607133030	40116021100	41505333300	41309311000
40609133030	41502321100	41508333300	41501311000
41002233030	41507321100	41009243300	41503311000

41511311000	40404032000	40906233000	40213055000
40608121000	40919232000	40909233000	40807155000
40704121000	40702142000	40920233000	50107033020
40916221000	40912213003	41303333000	50309254030
40301031001	40711213000	41304333000	51008243040
41103231000	40306023003	41305333000	51012244044
41510331000	40503123000	41307333000	50103055030
40701012000	40602123000	41313333000	50605035050
40512112002	40504123000	41512333000	51003255055
40515112000	40605123000	40304043000	51009255055
40703112000	40701123000	40405043000	50101055500
41204212000	40706123000	41312343000	50601055500
40805122000	40808123000	40318224000	50604055500
40810122000	40908223003	41306324000	51007255505
40902222000	40903223000	40205034000	50702233300
40904222000	40915223000	40306134000	50910245500
40905222000	40917223000	40204044000	51011233303
41104222000	41302323000	40508144000	50712255500
41311322000	41413323000	41314344000	50104011000
41504322000	41509323000	40302035000	50106011000
40305032000	40507133000	40403045000	50304011000
40308032000	40901233003	41310345000	50402011000

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50203021000	50509044000	50305055000	51014255000
50401031000	50908244000	50306055000	51015255000
50202022000	51001244000	50501055000	51016255000
50403032000	50906254000	50502055000	51017255000
50803132000	50907254000	50503055000	51018255000
50404023000	50809125000	50506055000	51019255000
50802123000	50701135005	50507055000	
50201033003	50806135000	50508055000	
50301033000	50709145005	50807155005	
50307033000	50703145000	50808155005	
50602033000	50914245000	50702155000	
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